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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY/DOCKET NO.
09/275,495	03/24/99	GARTSTEIN	V 7081M

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IM62/1002

EXAMINER

MERCADO, J

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 10/02/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

File Copy

Office Action Summary

Application No.
09/275,495

Applicant(s)
Gartstein et al.

Examiner
Julian A M rcado

Group Art Unit
1745



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-27 _____ is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-27 _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Mar 24, 1999 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the instant second controller as recited in claim 12 must be shown or the feature(s) canceled from the claim(s).

In addition, the instant housing having an output positive terminal electrically connected to a first container positive terminal and an output negative terminal electrically coupled to a second container negative terminal with the first container negative terminal electrically connected to the second container positive terminal as recited in claim 13 must be shown or the feature(s) canceled from the claim(s).

Regarding the above, Applicant is reminded that no new matter should be entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 13 recites a housing having an output positive terminal electrically connected to a first container positive terminal and an output negative terminal electrically coupled to a second container negative terminal with the first container negative terminal electrically connected to the second container positive terminal. However, the specification was found to be absent of a supportive disclosure. Of note, as discussed above the drawings also appear to be deficient in supporting the instant limitation.

In the event of an oversight by the examiner, Applicant is requested to provide the relevant sections in the specification for clarification on this issue.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6, 8, 11, and 12-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the cell internal impedance" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

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✓ In claim 6 at lines 3-4 of the claim, the scope of “predetermined impedance” is undefined and indefinite for lacking metes and bounds.

✓ Claim 8 recites the limitation "the pressure" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

✓ Claim 8 recites the limitation "the container pressure" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

✓ ²² Claim ~~12~~ recites the limitation "the current demand" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

✓ ²² Claim ~~12~~ recites the limitation "the capabilities" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. It is also unclear within the scope of the claim what functions comprise the capabilities of the controller.

Claim 23 recites the limitations “electrochemical cell” and “voltaic cell”, which are not mutually exclusive species.

Claims 13-22 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claims 1-7 and 24-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Nagai *et al* (U.S. Pat. 5,783,322).

Nagai teaches a battery comprising a container, a battery cell disposed therein and a controller [12] electrically coupled between electrodes [11] of the battery cell. (Col. 3 line 3 *et seq*, see col. 1 line 1 *et seq* for a description of a conventional battery package or housing) A circuit [13] operable to uncouple the output voltage of the is responsive to predetermined conditions such as a voltage below a predetermined voltage level or an overcharge of the cell. (Col. 9 line 18 *et seq*) Upon detection of an inverse polarity condition or a short circuit condition, the circuit operates such that the output voltage from the cell is uncoupled, thereby allowing for battery recharging. (Col. 10 line 53 *et seq*, col. 12 lines 43-61, col. 18 line 34 *et seq*) The circuit is also responsive to the cell internal impedance exceeding a predetermined impedance, wherein such a condition prompts uncoupling of the voltage and preventing overdischarge. (Col. 9 line 40 *et seq* and col. 16 line 59 *et seq*)

8. Claims 12, 14 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Stewart (U.S. Pat. 5,422,558).

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Stewart teaches a multiple-cell battery comprising a first and second container [20], battery cell [30] each disposed therein, and respective controllers [80]. (Col. 3 lines 48-66) A circuit [90] electrically coupled to the controllers uncouples one of the output voltages from terminals [12] and [14] of the multiple-cell battery. (Col. 3 lines 61-66, col. 5 lines 3-14, see also col. 1 lines 42-46 and 63-66)

Claim Rejections - 35 USC § 103

9. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai *et al* as applied for claims 1-7 and 24-27 above, in view of Stewart as applied for claims 12, 14 and 23 above.

The teachings of Nagai and Stewart are discussed above.

Nagai does not explicitly teach the predetermined conditions being the container pressure, the hydrogen concentration [H], or the temperature exceeding a respective limit. However, Stewart teaches monitoring of these conditions as potential hazardous conditions, and specifically teaches a circuit [90] which is responsive to detection of these conditions via appropriate sensors. (Col. 4 line 31 *et seq*, col. 5 line 26 *et seq*) Thus, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify Nagai's invention by employing pressure, [H], or temperature as indicators of a predetermined condition for reasons such as early detection of adverse battery conditions.

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Nagai does not explicitly teach uncoupling the controller when the capabilities of the controller to provide, for example, the required current level, are exceeded by the demands of a load attached to the battery. However, it would have been obvious to one of ordinary skill in the art to modify Nagai's invention by uncoupling the controller in such a situation for reasons such as minimization of parasitic power drain from a non-useable controller or, in another instance, in order to allow for a back-up controller to subsequently replace the non-useable controller. (See Stewart col. 7 line 56 *et seq*)

As to detection of hydrogen concentration, it is known to the skilled artisan that hydrogen gas is produced during a charging operation of a battery, thus, detection of an increase in internal battery pressure would naturally correspond with detection of an increase in hydrogen concentration.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart as applied for claims 12, 14 and 23 above, in view of Shambaugh *et al* (U.S. Pat. 4,418,127).

The teachings of Stewart are discussed above.

Stewart does not explicitly teach a housing having an output positive terminal electrically connected to a first container positive terminal and an output negative terminal electrically coupled to a second container negative terminal with the first container negative terminal electrically connected to the second container positive terminal. However, Shambaugh teaches such a configuration as illustrated in Figure 1. Thus, at the time the invention was made, it

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would have been obvious to one of ordinary skill in the art to modify Stewart's invention by employing the instant housing configuration for reasons such as serial connection of the plural battery modules for increased battery capacity and increased operating voltage.

11. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart as applied for claims 12, 14 and 23 above, in view of Nagai *et al* as applied for claims 1-7 and 24-27 above.

The teachings of Stewart and Nagai are discussed above.

Stewart does not explicitly teach uncoupling the output voltage of the controller from the container terminals based on detection of a predetermined conditions such as a voltage below a predetermined voltage level or an overcharge of the cell, or the detected temperature or pressure exceeding a limit. However, as discussed above, Nagai teaches over- or under-current detection and high pressure, i.e. high hydrogen concentration as a predetermined condition to indicate the need for output voltage uncoupling. Thus, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify Stewart's invention by uncoupling the output voltage of the controller upon sensing these conditions for reasons such as preservation of battery function and minimization of battery damage.

Stewart does not explicitly teach uncoupling the controller when the capabilities of the controller to provide, for example, the required current level, are exceeded by the demands of a load attached to the battery. However, it would have been obvious to one of ordinary skill in the

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art to modify Stewart's invention by uncoupling the controller in such a situation for reasons such as minimization of parasitic power drain from a non-useable controller or, in another instance, in order to allow for a back-up controller to subsequently replace the non-useable controller. (See Stewart col. 7 line 56 *et seq*)

As to a short circuit condition or an exceeding internal impedance or inverse polarity condition being the predetermined conditions for output voltage termination, as discussed above Nagai teaches these detection of these conditions as indicators of a need to uncouple the output voltage. Thus, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify Stewart's invention by employing these conditions as the predetermined condition, because these conditions indicate an adverse condition in the battery thereby requiring early detection and immediate voltage uncoupling.

Conclusion

12. The U.S. Patents cited in the original IDS paper have been fully considered by the examiner. However, the non-U.S. Patent documents and the non-Patent art were not considered as these documents were absent from the file. Applicant's representative, Thomas Osborne, has kindly agreed to supply these missing documents via mail. Applicant is reminded to submit these documents in response to this Office Action. In addition, Applicant is requested to

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resubmit the supplemental IDS paper filed September 7, 1999 as the transmission of this document via fax was incomplete.

Once re-submitted, the IDS papers will be fully considered and made of record in the file.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511 . The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisors, Steve Kalafut and Carol Chaney, can be reached on (703) 308-0433 and (703) 305-3777, respectively. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599. The unofficial fax number is (703) 306-3429.

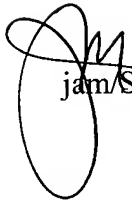
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511 . The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays.


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 jam September 27, 2000


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700